





30
385

0. 1652 COPY 2

STX

BEBR
FACULTY WORKING
PAPER NO. 90-1652

Strategy Coherence: A Measurement Procedure and Empirical Analysis

*Deepika Nath
D. Sudharshan*

The Library of the

JUN 5 1990

University of Illinois
of Urbana-Champaign



College of Commerce and Business Administration
Bureau of Economic and Business Research
University of Illinois Urbana-Champaign

BEBR

FACULTY WORKING PAPER NO. 90-1652

College of Commerce and Business Administration

University of Illinois at Urbana-Champaign

April 1990

Strategy Coherence: A Measurement
Procedure and Empirical Analysis

Deepika Nath

Faculty of Administrative Studies
York University
Toronto, Canada

and

D. Sudharshan

Department of Business Administration
University of Illinois
Urbana-Champaign

ABSTRACT

This paper presents a methodology to examine the coherence of strategies and sub-strategies of firms in an industry. Using the methodology developed, we examined the extent of strategy coherence in hospitals in a major metropolitan statistical area. In addition, we explored the relationship between coherence and performance. While there was support for the existence of coherence, it would appear that coherence of strategy is a sufficient condition for high performance, but not necessary. Ecological validation seemed to support our operationalization of coherence as following industry (group) norms.

Digitized by the Internet Archive
in 2011 with funding from
University of Illinois Urbana-Champaign

<http://www.archive.org/details/strategycoherenc1652nath>

1.0 Introduction

Most definitions of strategy present the view that business organizations develop and pursue strategies at three levels. These are the corporate level, the business (or business unit) level and the functional level (see, for example, Hayes and Wheelwright (1984), Hofer and Schendel (1978, etc.) An organization formulates its strategy to obtain and potentially maintain competitive advantage. It has been argued that the strategies at the various levels have to be coordinated to ensure such competitive advantages. For example: Day (1984) defined business strategy as the "...integrated actions in the pursuit of competitive advantage" with functional strategies as the supportive activities essential for translating the core strategy into an effective guide for action. Hatten and Hatten (1988: 21) state that the business strategy coordinates the actions of the firm and uses the functions to relate the firm to its environment. Hayes and Wheelwright (1984) say that to be effective, each functional strategy must support, through a specific and consistent pattern of decisions, the competitive advantage being sought by the business strategy.

Thus, there seems to be a general principle emerging, that calls for a coherent strategy in seeking and obtaining competitive advantage. For a potential new entrant or an existing firm seeking to re-position, it is perhaps useful to understand which strategic options are coherent across the three levels of strategy. However, there is a lack of empirical examination of the existence of such

coherence, and its implications, if any, for performance. In this paper we seek to provide such an examination, using a measure based on the notion of strategic groups.

In understanding the competitive arena, in which such advantages are being sought, the concept of strategic groups has been receiving increasing attention. Porter (1980: 129) defines a strategic group "as the group of firms in an industry following the same or a similar strategy along strategic dimensions." Thus, if we find that firms belong to the same strategic group at the three different levels, it would indicate coherence across the hierarchical levels of strategy in the industry.

A more direct examination of the issue would be to analyze each firm in turn and assess a match between its strategies at each of the three levels. Such a procedure has limitations, namely; identifying the criteria for establishing a match, and that the information needed is likely to be confidential and thus not easily obtainable. These limitations constrain the development of an implementable procedure for examining coherence in an industry.

Strategic groups can be seen as the spatial representation of strategic choices within an industry (a competitive mapping tool). This allows us to examine the coherence issue empirically and in an analytically tractable manner. In this method, we assume that if strategy coherence exists, then firms that belong to a strategic group at say the business level would also belong to the same strategic group at various functional levels. In other words,

strategic group membership at the functional levels of strategy would be consistent with that at the business level of strategy. Thus there is expected to be a one to one mapping or considerable congruence between the strategic groups. If significant congruence is not shown it would indicate that different firms at the same position at one level view coherence as leading to vastly different positions at another level. This would imply that a principle of strategy coherence would be extremely difficult, if not impossible to implement correctly; given that coherence has no common definition (i.e., there is not a common understanding of it even within the same strategic group or industry). Alternatively, it could mean that strategy coherence is not practised in this industry.

We next outline our research methodology. Our results and discussion including a section on ecological validation then complete this paper.

2.0 Research Methodology

Using both primary and secondary data, we carried out an in depth cross-sectional examination of coherence in the hospital industry in a major midwestern MSA. Due to confidentiality requirements, neither the city nor the individual hospitals can be identified.

We also conducted unstructured interviews with a few financial analysts and management consultants, to get their perspective on coherence, as well as to examine our results from a practitioner's point of view.

2.1 Operationalizing Strategy

Business strategy is operationalized in terms of the resource deployment and scope components (Hofer and Schendel, 1978). Resource deployment is further defined in terms of the functional areas viz. marketing, finance, production/operations and human resources. The final component of business strategy is scope. The final choice of variables was based on an in depth analysis of the industry.

2.2 Methodology for Defining the Strategic Groups

A strategic group consists of companies that have similar strategies. These strategies are represented by the values (or position) of these companies on a set of strategic variables. The literature on strategic grouping discusses alternate methodologies for defining the groups, (Nath, 1988). The dominant view argues for the use of multiple "strategic dimensions" to define the underlying strategic choices (Hatten and Hatten 1985; Hatten and Schendel 1977; Hatten, Schendel and Cooper 1978); Fiegenbaum 1986; Fiegenbaum, Sudharshan and Thomas, 1990, Cool and Schendel 1988, Nath, 1988). In addition, if strategic groups are to be considered

something more than an ad hoc construct, an in depth analysis of the industry is absolutely necessary (McGee and Thomas, 1986). The common methodology for grouping companies into similar and dissimilar groups is cluster analysis (Harrigan (1985), Cool and Schendel (1988)).

If we wish to obtain strategic groups at the functional level (sub-strategic groups) for say the marketing function, we would : 1) Identify the marketing function strategy variables. 2) Determine the value for each of the industry members on these variables. 3) A cluster analysis of the firm x variables matrix would then provide the strategic groups at the marketing function level. Similarly, we obtain sub-strategic groups for the other functional areas. A comparison of these groups would then provide an assessment of the coherence across functional area strategies. Comparison with grouping on business level variables provides the coherence across strategy levels.

The five steps that we followed in our methodology are depicted in Figure 1.

[Insert Fig 1 here]

Next, the specific details of each of these steps and the results obtained are presented.

2.21 Step 1: Measuring Strategy

Strategy was measured as scope and resource deployment. For each component of strategy (i.e. marketing, finance, production, human resources and scope), the variables chosen are briefly discussed below. Details of the rationale behind the choice of variables is reported in Nath (1988).

Marketing Strategy

Based on discussions with health care marketing executives, it appears that health care marketing has tended to encompass more of a communications task, as opposed to the traditional 4P's of marketing. This is reflected in the choice of marketing strategy variables.

Financial Strategy

Using standard principles of financial ratio analysis (Van Horne, 1986; Steffy, 1974; ICMA, 1984), the variables chosen to represent financial strategy reflect the profitability, liquidity and efficiency dimensions.

Production Strategy

The variables were chosen so as to equal the operations side of a hospital with standard production issues such as process time, efficiency of production, capacity utilization and so forth.

Human Resources Strategy

The final functional strategy studied was the human resource dimension. A service industry is the people that make up its Staff. Although organizational behavior issues are important, the variables chosen here describe more staffing issues than behavioral ones

Scope

The final aspect of business strategy is the scope of a firm's strategy. To a large extent, scope guides the resource deployment and also defines the extent of the strategy in general. The variables chosen to represent scope in this industry reflect this characteristic.

The operationalization of the variables is presented in Table 2.

[Insert Table 2 here]

2.22 Step 2: Defining the Strategic Space

The business level strategic space was defined in terms of the scope and resource deployment components for business strategy, and each sub-strategic space was defined in terms of micro level resource deployment decisions (i.e., functional strategies) and scope as discussed above.

In the interest of parsimony and to capture the correlation between various determinants of each sub-strategic space, the decision variables identified in each functional area and scope were

factor analyzed using principal components analysis. This reduced factor space was the (sub) strategic space for the respective functional level of strategy.

For example all the marketing strategy variables were factor analyzed to determine the dimensions of the marketing sub space. Similar analysis was carried out for the finance, operations, human resource and scope sub spaces.

For the business level of strategy, the strategic space was defined by combining the dimensions from all of the sub-strategic spaces.

2.23 Step 3: Data Acquisition

Data was collected from general hospitals as defined by the American Hospital Association in the metropolitan MSA. Both primary and secondary data were collected. For the primary data, a combination of mail and telephone surveys were conducted. The respondents were marketing executives at each of the hospitals. While an attempt was made to contact all the hospitals (i.e., a census was attempted), we obtained an 80% response rate (72 out of 90 eligible hospitals). The primary data was mostly marketing data.

Secondary data was obtained on (a) hospital operations, viz., admissions, discharges and case mix, (b) physical plant features such as size and service mix offered, (c) staffing characteristics, viz., size and composition, and (d) financial data such as revenues, assets, liabilities, etc. This data was obtained

from the American Hospital Association Annual survey, discharge abstracts and the Medicare Cost Report. In all three instances the response rate is very high due essentially to regulatory practices.

2.24 Step 4: Clustering into Strategic Groups

To form the strategic groups, hospitals were clustered using the factor scores on the retained principal factors (the dimensions of the corresponding sub-strategic space) using Ward's (1963) hierarchical minimum variance clustering technique. Figures 2-7 describe the strategic and sub-strategic groups in the principal component space. For the sake of exposition, only the first two principal components are depicted. These accounted for a minimum of 59% of the variance.

[Insert Figure 2-7 here]

2.25 Step 5: Comparison of Groups

To compare the membership of strategic groups at different levels, we followed the following procedure. Suppose we are comparing strategic groups for two strategy levels T_1 and T_2 . We compare each group at level T_1 with each group at level T_2 , in terms of the number of companies that are common to both and fill in Table 3. The match ratio (MR) is then computed as described therein.

[Insert Table 3 here]

The MRs between the functional level strategies and across the functional and business level strategies are shown in Table 4.

[Insert Table 4 here]

We examined the congruence between groupings based on the functional strategies and scope, with those obtained by pooling all these dimensions together to obtain a proxy for the overall business strategy.

2.26 Step 6: Coherence assessment

We expected to find greater intra-level coherence than inter-level coherence. Also, those strategy dimensions which influenced more strongly the overall grouping should exhibit greater coherence with the overall business strategy grouping.

Cohen's Kappa (Cohen, 1960) was used to test the statistical significance of the matches. Each of the (sub) strategic groups at functional levels of strategy as well as the scope of business strategy, was compared to that at the overall strategic groups at the business level of strategy for agreement. Table 5 presents the estimated values of Cohen's k and the corresponding Z - statistic.

[Insert Table 5 here]

For each of the comparisons between the overall business strategic group membership and the functional level (sub) strategic group membership, the Cohen's k is significantly greater than 0 at $\alpha = 0.05$. This implies that the coherence between strategies at the functional levels and the overall business strategy is statistically significant. In general (from Table 4), we observe that the match ratios between functional strategic groups and business strategic

groups are higher than between the various functional strategic groups.

In order to understand our results in the specific context of the hospital industry we conducted further analyses. We were concerned with assessing whether the functions that are considered to be more important in the industry were really more closely congruent with overall strategic positions.

To test the hypothesis of differing degrees of importance across functional areas, a test of difference between the k values was carried out. As Cohen (1960) reports, for two independent k 's a regular test of differences can be performed. However, the k were computed on the same sample and therefore the hypothesis test was adjusted for the correlated sample effect (Spence et al, 1976).

As the result in Table 6 show, at $\alpha = 0.05$, the coefficient of agreement for finance (with overall) was significantly greater than that for any other functional strategy area as well as the scope dimension. This suggests that finance plays the most important role in defining strategy in this industry. However, both scope and finance, in turn are more important than production, human resources and marketing. The generally lower coherence of marketing strategy with the others, suggests that perhaps marketing is not an integral part of the strategy formulation in this industry. This shall be explored further in the discussion section.

[Insert Table 6 here]

4.0 Conclusions

The results show the existence of coherence across hierarchical levels of strategy. The coherence tended to be higher (i.e. between business and functional strategy) than at the same level (i.e. between various functional strategies).

5.0 Discussion

Different aspects of strategy play differing roles to play in the development of a firm's (or SBU's) business strategy (e.g., Thorelli, 1986). Business strategy plays a critical role in the identification and maintenance of the differential advantage or competitive position that is fundamental to the success of the firm in any competitive environment. This competitive position is one of power -- to influence future strategic outcomes amongst competitors as well as inter-dependencies amongst them. It is important therefore to identify the sources of power as they apply in the context of any given industry. Essentially, different functional areas play different roles in the context of business strategy formulation. There are some that are more critical than others in the identification of competitive advantage (or power), ensuring the firm's survival in the long run; and this differential importance should be considered when monitoring the success of the strategy. Also, from the perspective of resource allocation, a priori

knowledge of differential importance of the functional areas, would provide a foundation for resource allocation.

In the hospital market studied, the hospitals varied widely in size, specialization, quality, costs, efficiency, affiliation and financial strength. One of the important competitive dimensions was that of the hospital's size and scope of services. Generally speaking, larger hospitals tend to have larger staff ratios and the availability of a wider range of services. This makes it possible for them to treat a wider variety of cases, and thus increases their ability to attract more patients. Teaching hospitals have increased access to funding and also the expertise to handle unusual cases. Community hospitals thrive mostly on the personalized care dimension. In fact, the location factor plays a critical role in establishing a fairly captive market.

The financial strength of the hospital is probably the most important single distinguishing factor in the market. A lack of financial viability will not compensate for the expertise, and skilled staff or the wide range of services offered, even though, there is undoubtedly some correlation between the two factors.

Interestingly enough, the role of marketing did not appear to be significant in this "industry." This is because in this industry, marketing has been mostly a communications task--with the product and pricing decisions handled at more of a corporate level as opposed to at the functional level.

These findings confirm previous results. The literature on

the hospital "industry" does indeed indicate that competition is largely along the lines of services and facilities (Flood and Scott, 1987, Noether, 1987). While the literature also suggests a quality dimension, the lack of a reliable and accurate measure of quality makes it difficult to validate or refute this.

6.0 Coherence and Performance

Having observed coherence the next goal was to examine the coherence performance relationship. Following a coherent strategy should theoretically result in improved performance.

Cool and Schendel (1987) found some support for the claim that strategic group membership has performance implications mostly in terms of market share. Based on this, we studied performance differences across the 5 strategic groups, on five performance measures. Five performance variables were used based on the notion that performance is multi dimensional. These were market share, occupancy ratio, return on assets, return on total funds and asset turnover (see Table 4 for variable definitions).

The ANOVA results showed that there were significant differences (at $\alpha = 0.05$) across the strategic groups on all the performance measures, except asset turnover. The R^2 however, ranged from 0.155 to 0.3418, and were thus not operationally significant (Table 7).

[Insert Table 7 here]

We then explored the coherence-performance relationship, to see if the performance differences carried through across different levels of coherence. To study the coherence-performance relationship firms were grouped according to the coherence of their strategy. The variable "coherence" was operationalized as follows. Five functional area sub strategic groups were defined (finance, scope, production, human resources and marketing). If a firm belonged to the same sub strategy group for all five functions, then it was classified as exhibiting the highest degree of coherence, with low coherence being demonstrated by a firm that belonged to different sub strategy groups for each functional level.

Based on this operationalization, four levels of strategic coherence were defined, with coherence ranging from a low of 2 to a high of 5. There were 28 hospitals that had a coherence score of 2, 32 hospitals with a coherence score of 3, 5 hospitals with a score of 4 and 6 hospitals with a score of 5. The performance of the constituent firms was studied on the five performance variables. The analysis of variance (Table 8) was not significant across the different degrees of coherence. This seems to suggest that the convergence or coherence of strategies/goals across functional areas is not a significant contributor to performance and that whether or not there is strategic coherence exhibited by firms, performance is not affected significantly.

[Insert Table 8 here]

Looking at the strategic group membership of hospitals with high coherence (4 and above) shows that they belonged to the strategic groups that exhibited high performance. However, many of the hospitals that had low coherence also belonged to these strategic groups, indicating that low coherence does not mean low performance, but high coherence seems to be associated with high performance. In other words, coherence seems to be a sufficient condition for high performance, but not a necessary condition.

Our key findings are thus:

- a) The use of strategic groups matching to assess strategy coherence seems to make sense.
- b) There is greater congruence between strategies at the same level of the strategy hierarchy, than across different levels of the hierarchy.
- c) Strategy coherence appears to exist as consistency of strategic choices across different levels of strategy.
- d) High coherence is sufficient but not necessary for high performance.

7.0 Ecological Validation

To give our study some ecological validation we talked to a few financial analysts and management consultants. In theory analysts subscribed to the notion of coherence, and their working definition is more in terms of consistency of strategy over time and across levels of strategy. However, it depended a lot on the

industry norms. In some cases it was seen almost as the converse of diversification. However a consultant was more likely to rigidly examine consistency or coherence within a firm, with respect to operational, managerial and consumer issues. Part of the depth to which the concept is emphasized depends on the breadth and quality of data and information available. The external analyst has relatively sparse data while a consultant is privy to detailed and in depth information. With respect to the coherence-performance relationship there was again a theory vs practical view point. Theoretically, a planning mode would assume that following a coherent strategy would reinforce the company's competitive strengths, which in turn would be reflected in improved performance. However, in reality it would appear to be a post hoc relationship in that if a firm is successful, its strategy would appear to be or be classified as coherent.

For future research, we would suggest, of course, the replication of this study in other industries. We would also suggest the framing of a study to expressly address the dilemma between strategy coherence and strategy flexibility. Do coherent strategies lead to better short run performance but poor long run performance? Is flexibility along some functional areas superior to others? We would urge a theoretical understanding of these issues followed by carefully constructed longitudinal empirical studies to test the theory.

FIGURE 1: FLOW DIAGRAM OF RESEARCH METHODOLOGY

Step Number

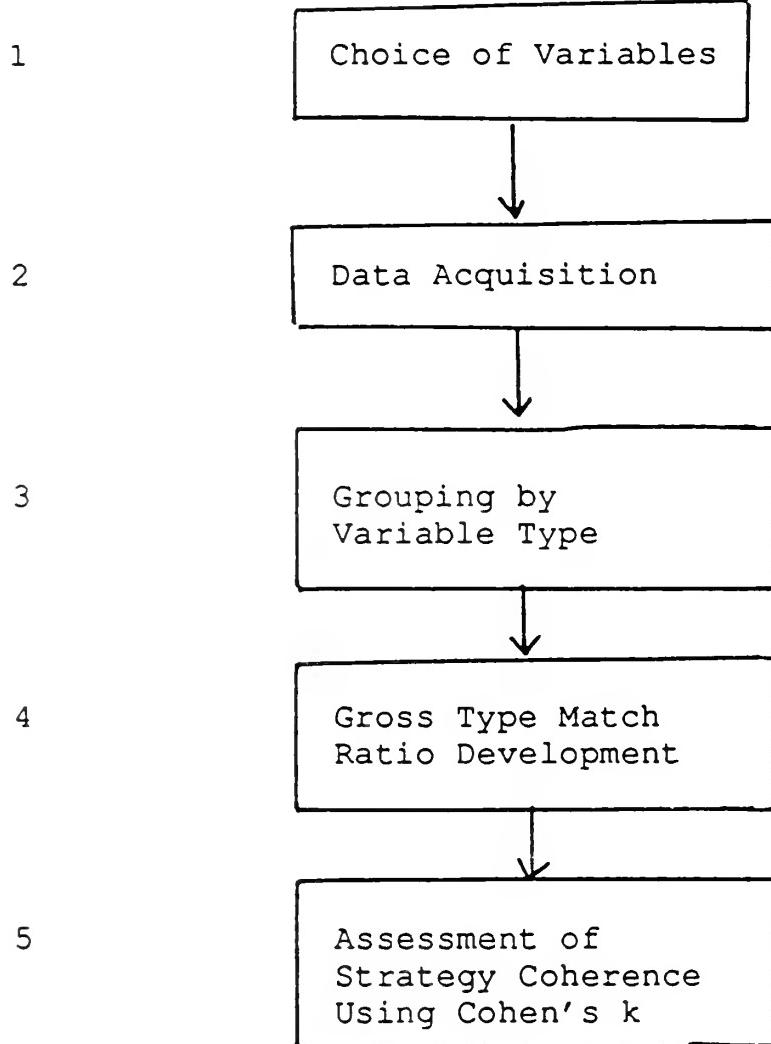


TABLE 2: VARIABLE DEFINITIONS FOR THE HOSPITAL STUDY

Marketing Variables

Physician PR index	Number of PR activities
Existence of physician liaison	
Community involvement index	Number of community activities
Existence and extent of HMO's and PPO's	
Satellite centers - existence and number	

Finance Variables

Debt/Asset ratio	<u>Total liabilities</u> total assets
Long term debt ratio	<u>LT liabilities</u> fixed assets
Asset/bed ratio	<u>Total fixed assets</u> total beds
Cost of capital ratio	<u>Cost of capital</u> total expenses
Gross markup ratio	<u>Total Patient revenue</u> operating expenses
Cost price ratio	<u>Total expenses</u> Average price
Adjusted cost ratio	<u>Operating expenses</u> Inpatient days
Net asset per patient	<u>Net fixed asset</u> Average daily census

Production Variables

Average Length of stay	<u>inpatient days</u> # admissions X Case mix index
------------------------	--

TABLE 2 (cont'd)

Birth index	<u>Number of births</u> X 100 <u>Number of admissions</u>
Surgical index	<u>Inpatient surgeries</u> X 100 <u>Number of admissions</u>
Capacity utilization index	<u>Number of admissions</u> <u>Number of beds</u>
Outpatient to inpatient ratio	<u>Total outpatient visits</u> <u>Total inpatient visits</u>

Human Resource Variables

Total staff per patient ratio	<u>Full time equivalents</u> <u>Average daily census</u>
Medical staff per bed ratio	<u>Total medical staff</u> <u>Number of beds</u>
Nursing staff to bed ration	<u>Total fte equivalent RN and LPN</u> <u>Number of beds</u>
Nursing to medical staff ratio	<u>Number of FTE RN & LPN</u> <u>Number of doctors on staff</u>
Medical staff to patient ratio	<u>Number of medical staff members</u> <u>Average daily census</u>
Nursing staff to patient ratio	<u>Number of FTE RN and LPN</u> <u>Average Daily Census</u>
Proportion of board certified doctors	<u>Number of board certified doctors</u> <u>Total number of doctors</u>
Ratio of payroll expenses	<u>Total payroll expenses</u> <u>Total expenses</u>
Ratio of non payroll benefits	<u>Non payroll benefit expenses</u> <u>Total expenses</u>

Scope Variables

Bed size	Total number of beds
Location	X-Y co-ordinate on the map
Teaching involvement	Number of affiliations and approvals for medical education

TABLE 2 (cont'd)

Scope of services index	$\frac{\sum_i W_i S_i}{\sum_i W_i} * 100$
	where $S_i = 1$ (yes), 0 (no) and
	$W_i = \frac{1}{[N - \sum_j S_{ij}]}$
	$j = 1, 2, \dots, N$
	$i = \text{number of services}$
	$N = \text{total number of hospitals in the sample}$
Case mix index	$\frac{\sum_i L_i P_i}{\sum_i L_i P_i} * 100$
	where $L_i = \text{Average length of stay}$
	for case type j across all hospitals
	$P_{ij} = \text{Proportion of case type } j \text{ in hospital } i$
	$P_i = \text{Proportion of case type } j \text{ in total patient population}$

TABLE 3: MATCH RATIO COMPUTATION

		Level T ₂ Group Membership							
		1	2	.	.	j	.	n	Total
Level T ₁ Group Membership	1	C ₁₁	C ₁₂	.	.	.	.	C _{1n}	M ₁
	2	C ₂₁	C ₂₂	.	.	.	.	C _{2n}	M ₂
	3	C ₃₁	C ₃₂	.	.	.	.	C _{3n}	M ₃

	i	C _{i1}	C _{i2}	.	C _{ij}	.	C _{in}		M _i

	m	C _{m1}	C _{m2}	.	.	.	.	C _{mn}	M _m
	Total	N ₁	N ₂	.	.	.	.	N _n	N

Where:

C_{ij} = Number of companies that are in group i based on grouping for level T₁, and in group j based on grouping for level T₂,

N = Total number of companies in the sample
 $(\sum_m M_m = \sum_n N_n = N)$

Match Ratio = $\frac{\sum_i \sum_j C_{ij}}{N}$

TABLE 4: MATCH RATIOS: HOSPITAL INDUSTRY

	Marketing	Finance	Production	Human Resources	Scope	Overall
Marketing	1.0	.36	.33	.37	.36	.37
Finance	.36	1.0	.46	.39	.37	.66
Production	.33	.46	1.0	.41	.40	.47
Human Resources	.37	.39	.41	1.0	.36	.47
Scope	.36	.37	.40	.36	1.0	.51
Overall	.37	.66	.47	.47	.51	1.0

TABLE 5: COHEN'S K FOR BUSINESS STRATEGY AND
FUNCTIONAL STRATEGY COHERENCE: THE HOSPITAL INDUSTRY

<u>STRATEGIC GROUP</u>	<u>COHEN'S K</u>	<u>Z VALUE</u>
Scope	0.36	5.90
Finance	0.48	6.49
Human Resources	0.30	5.09
Production	0.28	4.00
Marketing	0.18	2.97

* Significant at $\alpha = 0.05$

TABLE 6: COHEN'S K FOR COHERENCE BETWEEN DIFFERENT
FUNCTIONAL STRATEGIES: THE HOSPITAL INDUSTRY

$$H_0: K_i \leq K_j$$

$$H_1: K_i > K_j$$

NULL HYPOTHESIS	Z-STATISTIC
$K_{\text{Finance}} \leq K_{\text{Marketing}}$	4.82
$K_{\text{Finance}} \leq K_{\text{Production}}$	3.05
$K_{\text{Finance}} \leq K_{\text{Human Resources}}$	2.85
$K_{\text{Finance}} \leq K_{\text{Scope}}$	1.50
$K_{\text{Scope}} \leq K_{\text{Marketing}}$	4.30
$K_{\text{Scope}} \leq K_{\text{Production}}$	1.53
$K_{\text{Scope}} \leq K_{\text{Human Resources}}$	1.23
$K_{\text{Human Resources}} \leq K_{\text{Marketing}}$	2.50
$K_{\text{Human Resources}} \leq K_{\text{Production}}$	0.80
$K_{\text{Production}} \leq K_{\text{Marketing}}$	1.73

$$Z = (K_i - K_j) / (\sigma_i^2 + \sigma_j^2 - 2r_{ij}\sigma_i\sigma_j)$$

where σ_i , σ_j are the variances of the respective k's and r_{ij} is the correlation between the raw score distributions.

Thus, $K_{\text{Finance}} > K_{\text{Scope}} > K_{\text{Human Resources}}, K_{\text{Production}} > K_{\text{Marketing}}$

TABLE 7: PERFORMANCE DIFFERENCES ACROSS STRATEGIC GROUPS
THE HOSPITAL INDUSTRY

Performance Variable	F statistic
Market Share	6.53
Occupancy	8.54
Return on Assets	3.76
Return on Funds	3.03
Asset Turnover	1.02*

* Not significant at $\alpha = 0.05$

TABLE 8: COHERENCE - PERFORMANCE RELATIONSHIP
THE HOSPITAL INDUSTRY

Variable	F. Value
Market share	1.56
Occupancy	0.93
Return on assets	0.47
Return on total funds	0.5
Asset turnover	1.14

(Not significant at $\alpha = 0.05$).

Figure 2: Sub Strategic Groups: Scope
Location vs. Size/Specialization

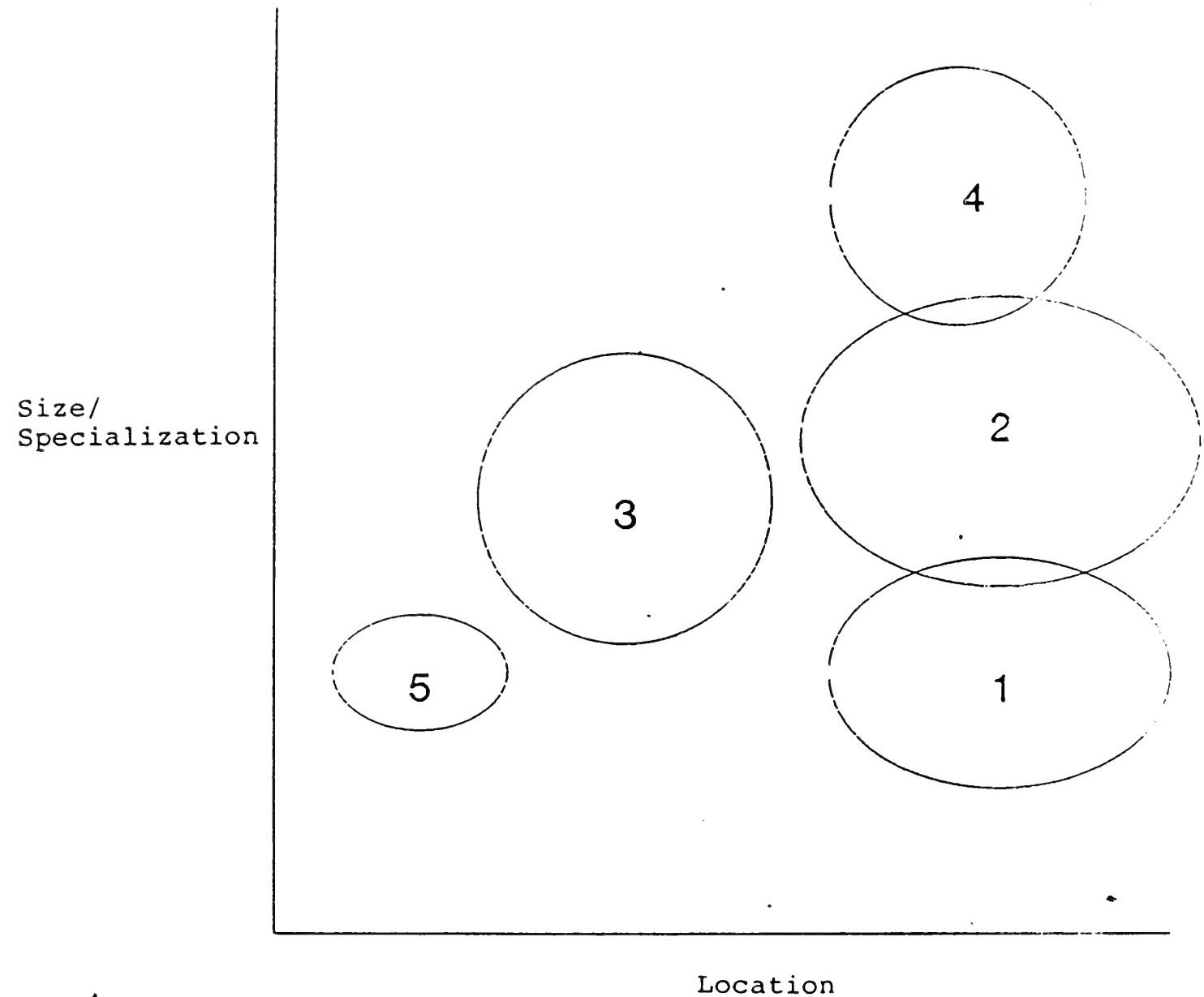


Figure 3: Sub Strategic Groups: Finance
Debt Structure vs. Liquidity

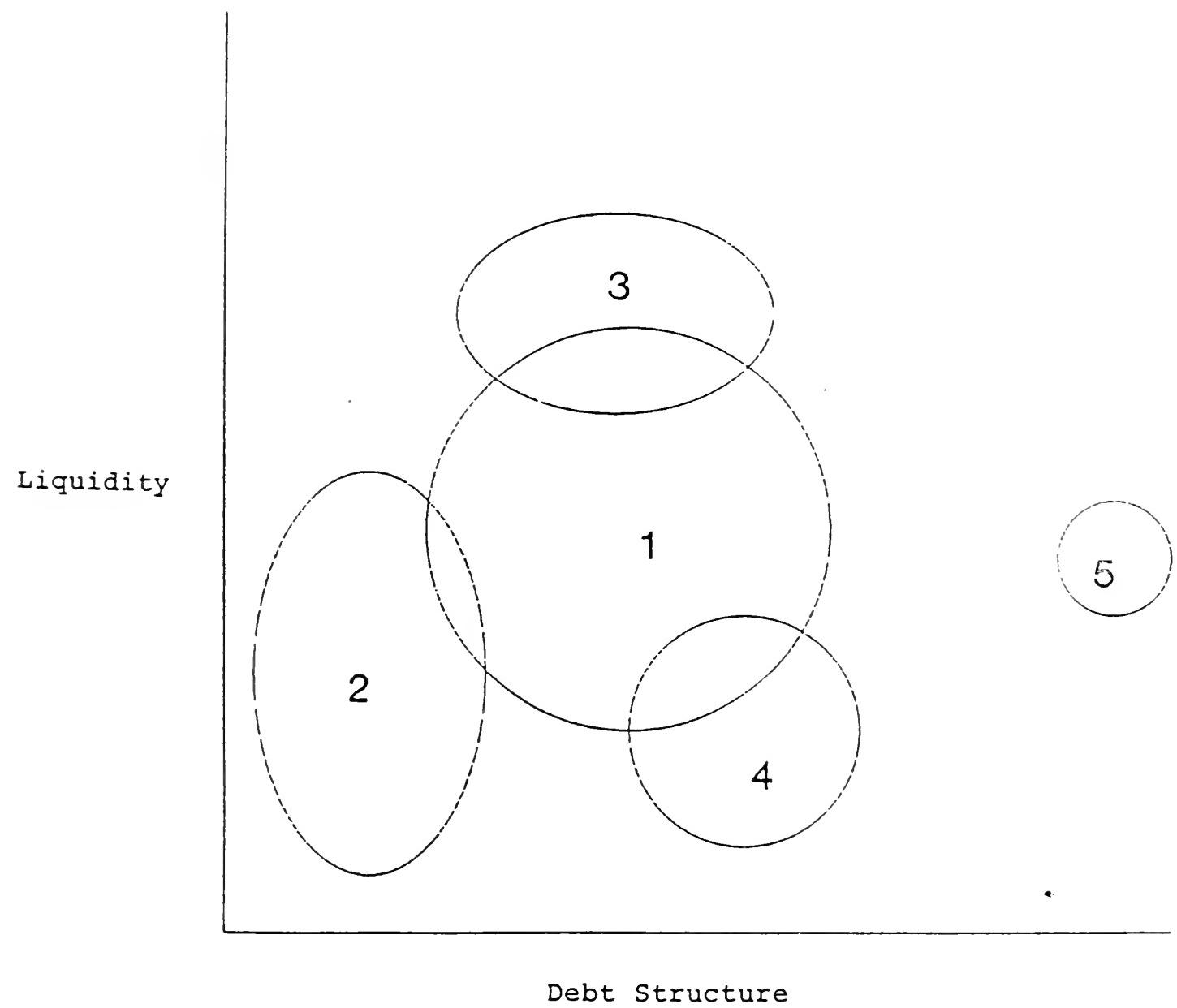


Figure 4: Sub Strategic Groups: Human Resources
Quality of Nursing Staff vs. Quality of Medical Staff

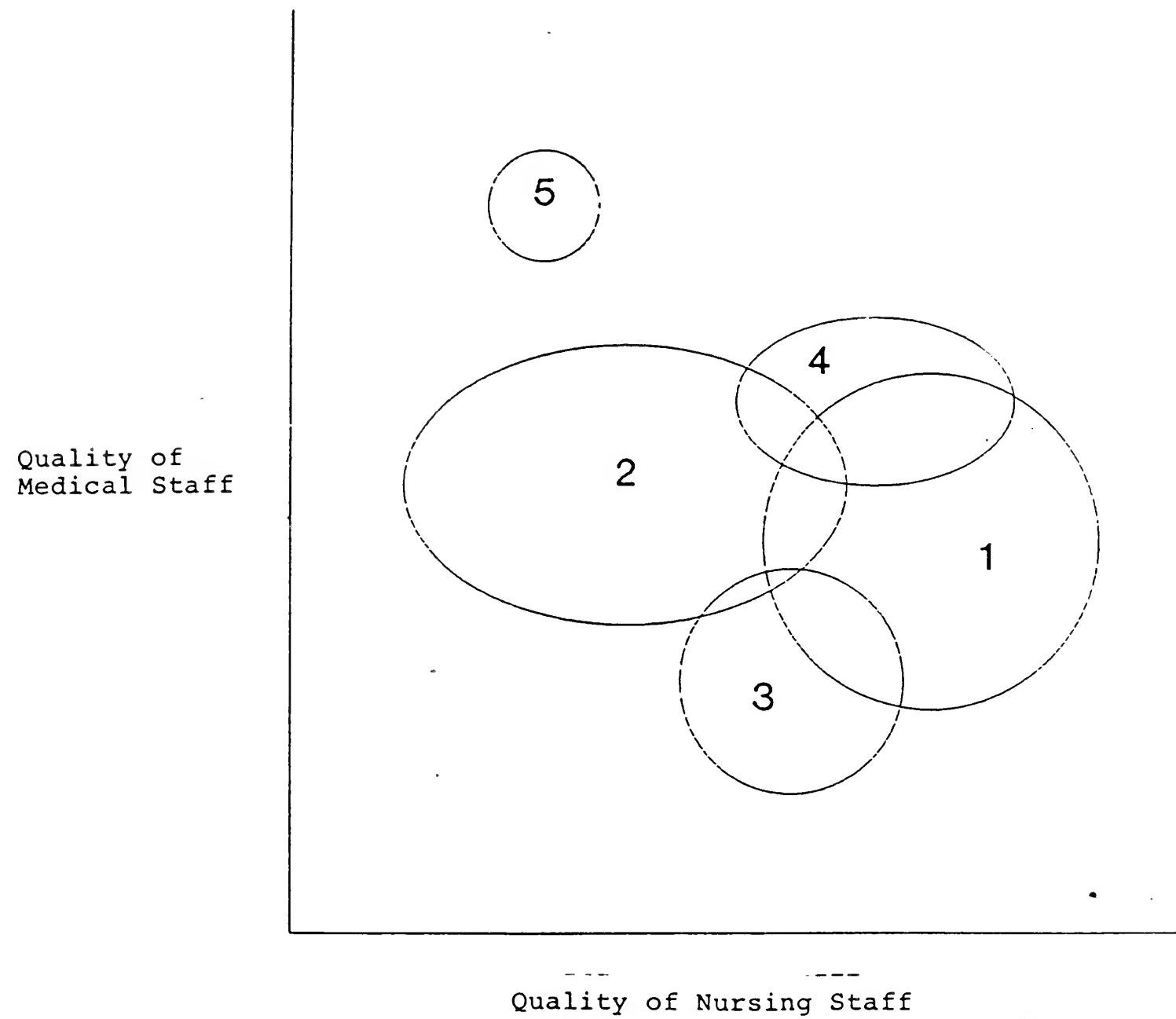


Figure 5: Sub Strategic Groups: Production Capacity Utilization vs. Process Time

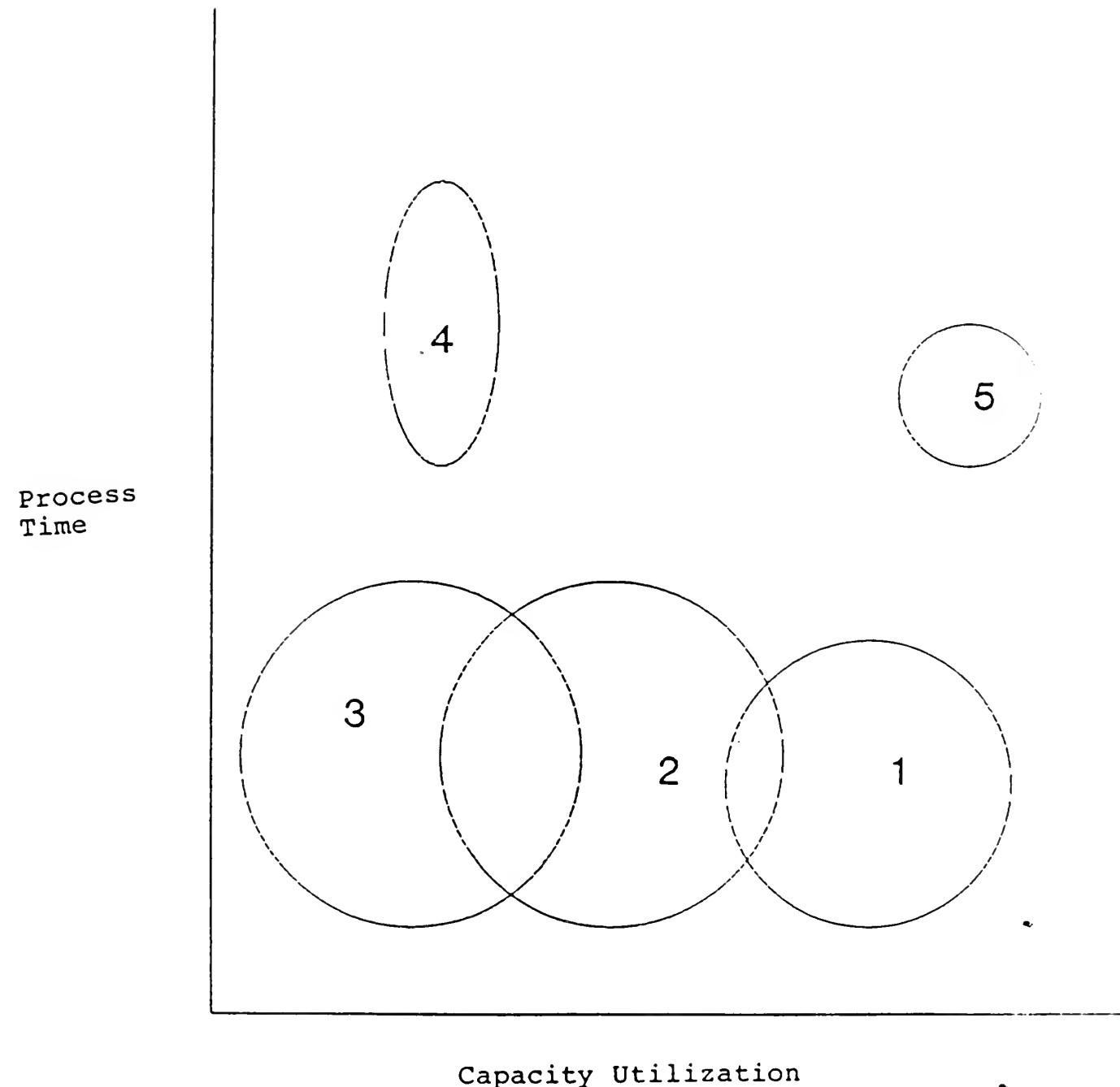


Figure 6: Sub Strategic Groups: Marketing Extent of Segmentation vs. Community Presence

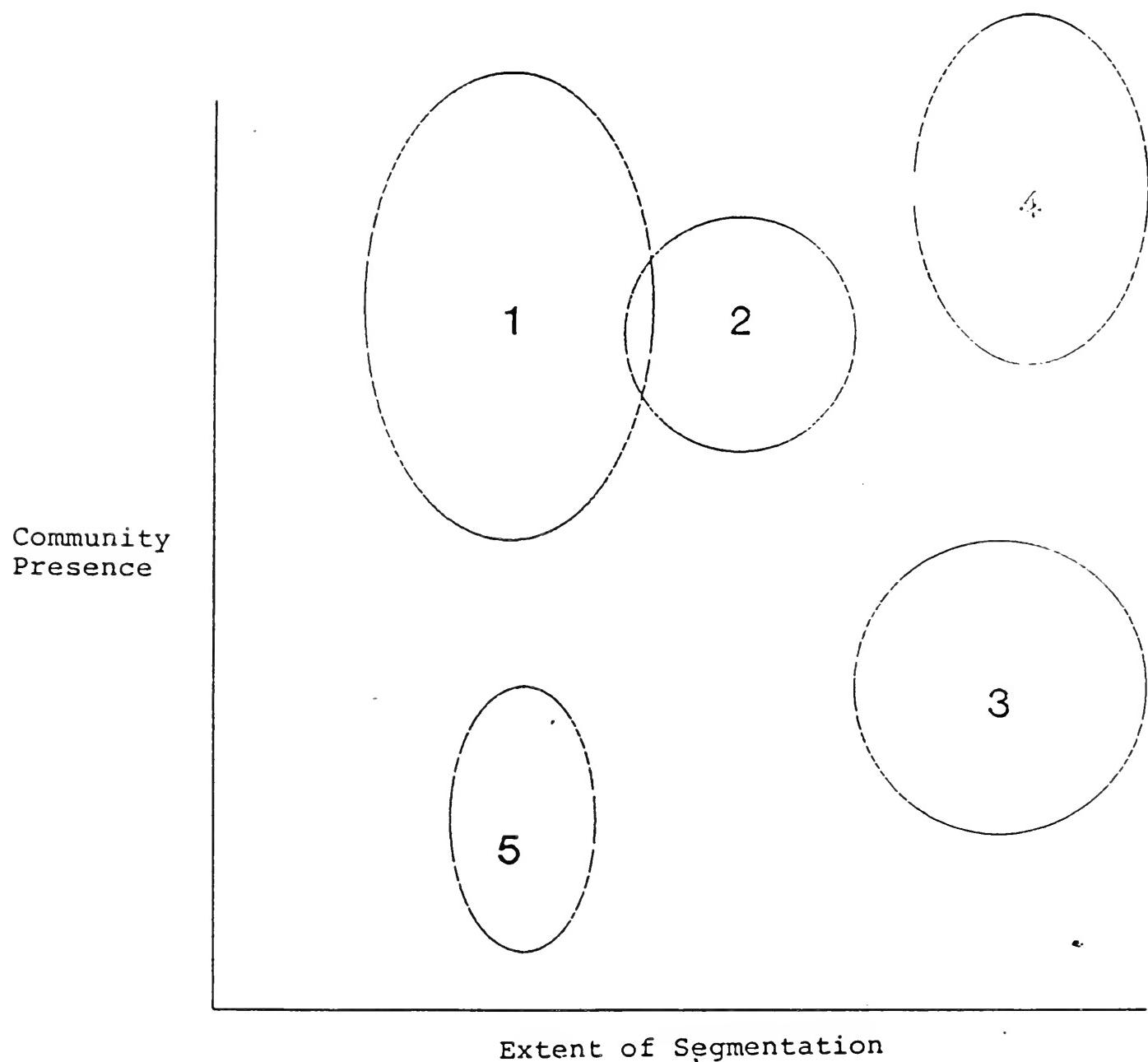
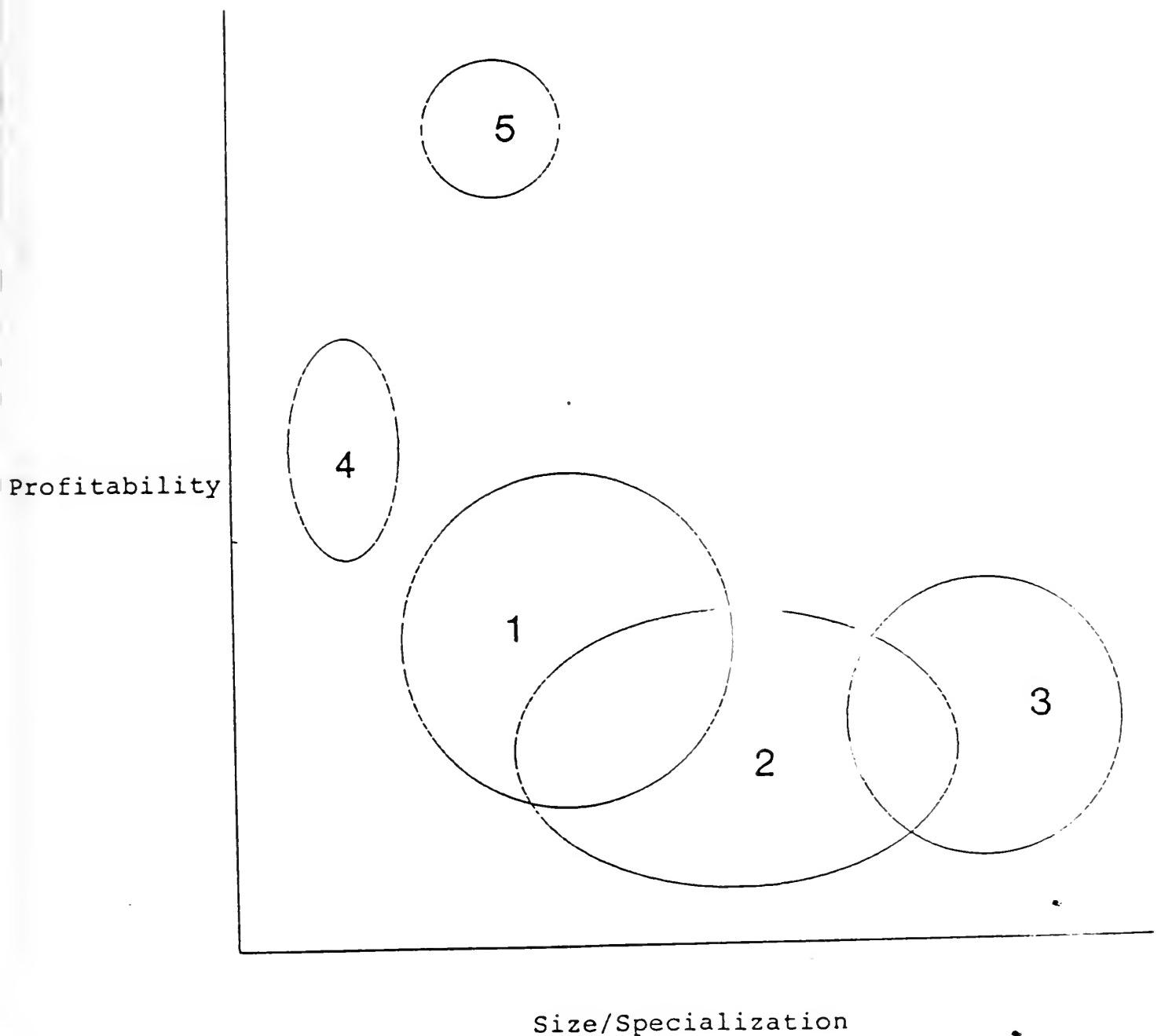


Figure 7: Strategic Groups - Business Strategy
Size/Specialization vs. Profitability



REFERENCES

- Baird, Inga S., D. Sudharshan and Howard Thomas (1989): "Incorporating Temporal Change Into the Process of Formulation of Strategic Groups: A Three Mode Factor Analysis Approach": Journal of Management, Vol. 14, No. 3, 425-439.
- Cohen, Jacob (1960): "A Coefficient of Agreement for Nominal Scales" Educational and Psychological Measurement, 20, 37-46.
- Cool, Karel O. (1985): "Strategic Group Formation and Strategic Group Shift: A Longitudinal Analysis of the U.S. Pharmaceutical Industry, 1963-82. Unpublished doctoral dissertation, Purdue University, West Lafayette, Indiana.
- Cool, Karel O. and Dan Schendel (1987): "Strategic Group Formation and Performance: The Case of the Pharmaceutical Industry 1963-1982," Management Science, 3, 1102-1124.
- Day, George S. (1984): "Strategic Market Planning: The Pursuit of Competitive Advantage", (West Publishing).

Fiegenbaum, Avi (1986): "Dynamic Aspects of Strategic Groups and Competitive Strategy: Concepts and Empirical Examination in the Insurance Industry," Unpublished doctoral dissertation, College of Commerce and Business Administration, University of Illinois at Urbana-Champaign.

Fiegenbaum, Avi, D. Sudharshan, and Howard Thomas (1990): "Strategic Time Periods and Strategic Groups Research: Concepts and An Empirical Example," Journal of Management Studies, July (forthcoming).

Flood, Ann Barry and Richard Scott (1987): : Hospital Structure and Performance: John Hopkins Press.

Harrigan, Kathryn R. (1981): "Barriers to Entry and Competitive Strategies," Strategic Management Journal, 2, 395-413.

Harrigan (1985): "An Application of Clustering for Strategic Group Analysis," Strategic Management Journal, 6, 55-73.

Harrigan, Kathryn R. (1983): "Strategies for Vertical Integration," New York, Lexington Books.

Hatten, Kenneth J. (1974): "Strategic Models in the Brewing Industry", Doctoral Dissertation, Purdue University, West Lafayette, Indiana.

Hatten, and Hatten (1985): "Some Empirical Insights for Strategic Marketers: The Case of Beer," In Strategic Marketing and Management (eds. Howard Thomas and David Gardner), 275-292.

Hatten and Schendel (1977): "Heterogeneity Within and Industry: Firm Conduct in the U.S. Brewing Industry, 1952-71, " Journal of Industrial Economics, 26, 97-113.

Hatten, Hatten and Cooper (1978): "A Strategic Model of the U.S. Brewing Industry: 1952-1971, " Academy of Management Journal, 21, 592-610.

Hawes, Jon M. and William F. Crittenden (1984): "A Taxonomy of Competitive Retailing Strategies," Strategic Management Journal, 5, 275-287.

Hayes, Samuel L., III, A. Michael Spence and David Van Praag Marks (1983): "Competition in the Investment Banking Industry," Harvard University Press, Cambridge, Mass.

Hayes, Robert H., and Steven C. Wheelwright (1984): "Restoring Our Competitive Edge: Compelling Through Manufacturing. New York, John Wiley and Sons.

Hofer, Charles W. and Dan E. Schendel (1978): "Strategy Formulation: Analytical Concepts," (West Publishing).

ICMA (1984): Management Accounting Official Terminology (Institute of Cost and Management Accountants).

McGee, John and Howard Thomas (1986): "Strategic Groups: Theory, Research and Taxonomy," Strategic Management Journal, 7, 141-160.

Nath, Deepika (1988): "Antecedents of Competitive Advantage and Position: A Marketer's View of the Hospital Industry"
Unpublished Doctoral Dissertation, College of Commerce and Business Administration, University of Illinois, Urbana Champaign, July.

Noether, Monica (1987): "Competition Among Hospitals" Staff Report of the Bureau of Economics, Federal Trade Commission.

Spence, J. T., J. W. Cotton, B. J. Underwood and C. P. Duncan
(1976): "Elementary Statistics" (Prentice Hall).

Steffy, Wilbert (1974): "Financial Ratio Analysis: An Effective Management Tool" (University of Michigan).

Thorelli, Hans (1986): "Networks: Between Markets and Hierarchies:
Strategic Management Journal, 7, 37-51.

Van Horne, James C. (1983: "Financial Management and Policy",
(Prentice Hall).

Ward, J. H. (1963): "Hierarchical Grouping to Optimize an Objective Function"
Journal of American Statistical Association, 58, 236-244.



UNIVERSITY OF ILLINOIS-URBANA



3 0112 060295950